FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

Fernald, Hamilton County, Ohio

Office: Ohio Field Office Project

Size: 1,050 acres (1.6 square miles)

NPL Status: Placed on the NPL on November 21, 1989.

Mission: The Fernald Environmental Management Project (FEMP), formerly the Feed Materials Production Center, was constructed in the early 1950s and was used to produce uranium metal products for use by the Government. Production was suspended in July 1989.

Overview of Environmental Conditions: Soil and groundwater contamination by radionuclides above background levels both onsite and in adjacent offsite areas. Release of radon and the retention of large quantities of low-level radioactive and mixed wastes in onsite storage areas are also of significant concern.

CERCLA/RCRA Remediation Funding in FY 98: $258,700,000

Progress in Reaching Interagency Agreement

The Consent Agreement became effective in June 1990, and subsequently amended (last amendment made on May 15, 1997). Final Records of Decision for all five Operable Units have been approved.

Specific Cost Estimates and Budgetary Proposals Involved in Each Interagency Agreement

Funds budgeted for environmental restoration in support of these agreements at the FEMP total $274.0 million for FY 99 and $280.6 million for FY 00 according to the request in the President's budget.

Public Comments Regarding Interagency Agreements

In FY 98, Fernald stakeholders continued to be an important part of the cleanup decision-making process. DOE officially implemented a "balanced approach" to waste shipping and disposal, a recommendation made by the Fernald Citizens Advisory Board in 1995. In addition, Fernald's Community Reuse Organization is providing assistance to employees and the community by implementing economic development programs prior to site closure. The Community Reuse Organization has taken inventory and assessed Fernald's resources and is developing a plan to transition the resources for productive use after the cleanup is complete.

Progress in Conducting Remedial Investigations/ Feasibility Studies

Assessment activities for Fernald were completed before FY 97. Records of Decision have been approved for all of the five OUs. Implementation of Remedial Design/Remedial Action Work Plans is underway for all of the five OUs. However, a formal dispute

resolution required a Record of Decision amendment for Operable Unit 4 for Silos 1 and 2. Therefore, a revised Feasibility Study for Operable Unit 4 for Silos 1 and 2 is due in draft to the regulators by February 1, 2000.

Progress in Conducting Remedial Actions

The Waste Pits Project cleanup contract was awarded to IT Corporation, who will receive payment for shipped waste. During FY 98, progress continued on the infrastructure. The waste processing and shipping will be initiated in FY 99. The On Site Disposal Facility continued to accept soil and debris in Cell 1 and Cell 2 during FY 98. Waste was first placed into Cell 2 in November 1998. Safe shutdown was completed on three plants in OU 3, the former production area.

OU 1: Waste Storage Area

This OU comprises the existing six FEMP waste pits, the Clearwell, the Burnpit, berms, liners, and soil within the OU boundary. The selected remedy for OU 1 is removal, treatment, and offsite disposal at a permitted commercial disposal facility. This remedy addresses the principal threats posed by OU 1 by removing waste materials and contaminated soils to health-based levels, and treating waste materials and soils to facilitate waste handling. These actions reduce the potential for contaminant migration and ensure disposal facility waste acceptance criteria are met.

The OU 1 Record of Decision was signed on March 1, 1995. The approved Remedial Design/Remedial Action Work Plan established six milestones. The waste pits cleanup contract was awarded to IT Corporation. The contract provides for payment to IT for the waste that is shipped. IT Corporation will pay the costs of all infrastructure development until the waste is actually treated and shipped. Onsite rail construction and offsite rail upgrades were completed in FY 98. Railcars for the Waste Pits Project remediation were also purchased in FY 98. Activities continue to progress in support of the March 1, 1999 milestone for material load-out of the first railcar.

OU 2: On Site Disposal Facility

OU 2 addresses the On Site Disposal Facility (the Solid Waste Landfill, the North and South Lime Sludge Ponds and the Inactive and Active Flyash Piles are now addressed in OU 5). The OU 2 ROD was signed by U.S. EPA in May 1995. The Remedial Design Work Plan and Remedial Action Work Plan have been accepted by the U.S. EPA. The On Site Disposal Facility (OSDF) design has been completed, and the construction of Cell 1 has been completed. Phase II of the OSDF construction began in July 1998. Waste placement first began in Cell 1 in December 1997 and in Cell 2 in November 1998. In FY 98, approximately two hundred thousand cubic yards of contaminated soil and debris were placed into the On Site Disposal Facility for final disposal. In addition, the construction of the liner for Cell 2 was completed in FY 98, and the construction of the liner for Cell 3 will be initiated in FY 99. Significant effort has been put into developing institutional controls to ensure that only acceptable waste continues to be placed into the OSDF. These controls ensure that the waste regulations are strictly met and that the cell integrity is maximized.

OU 3: Production Area and Production-Associated Facilities

OU 3 addresses the above- and below-grade improvements on the FEMP property and waste management. The OU 3 Record of Decision for Interim Remedial Action (IROD) (June 1994) established that the ROD for the OU 3 final remedial action would establish the strategy for the final disposition of the materials generated from the interim remedial action. All OU 3 buildings and structures will first be decontaminated and then dismantled. The D&D sequence and schedule were initially outlined, but a revised D&D sequence and schedule for implementation plan submittals were approved by U.S. EPA and Ohio EPA in May 1996.

The Record of Decision for Final Remedial Action was signed in August 1996; it incorporated the IROD and four ongoing removal actions. An Integrated Remedial Design/Remedial Action Work Plan was approved by U.S. EPA in May 1997, which delineates the overall path for OU 3. By FY 98, the completed work included the demolition for the Plant 1 Ore Silos, the High/Low Nitrate Tanks, Plant 1, Plant 4A, and Plant 7. A total of 53 of the 200 site structures has been demolished. In FY 98, safe shutdown (decontamination) was completed on Plants 2, 3 and 8, and D&D was completed on the Boiler Plant. Construction of the new Sewage Treatment Plant was also completed during FY 98. FY 99 planned activities include the completion of the safe shutdown program and two plant D&Ds.

OU 4: Silos 1, 2, 3, and 4

This OU comprises the four waste storage Silos located in the FEMP waste storage area. Radioactive ore residues are stored in Silos 1 and 2, and this material emits significant amounts of radon. Cold metal oxides are stored in Silo 3, and Silo 4 is empty.

A Record of Decision was signed in December 1994. The OU 4 Remedial Design Work Plan was signed in May 1995, and enforceable milestones were set in this plan. Additional milestones were set in the Remedial Action Work Plan approved by the U.S. EPA in October 1995. A pilot program was undertaken to test vitrification as a method to treat the Silo material. Difficulties with this pilot program resulted in certain milestones becoming unattainable. Resolution was obtained through an informal dispute resolution with the U.S. EPA. The resolution agreement required the OU 4 ROD to be amended for Silos 1 and 2, and an Explanation of Significant Differences was required for Silo 3. The agreement required a $100,000 penalty by US EPA. However, in lieu of additional penalties, US EPA required DOE to perform several Supplemental Environmental Projects (SEP) on wildlife and habitat restoration and scrap recycling in lieu of penalties. Implementation of the SEP Work Plans is well underway.

These technical difficulties led U.S. EPA and DOE to decide to use stabilization for the Silo 3 material instead of vitrification as identified in the Feasibility Study. A Remedial Design Work Plan for Silo 3 was submitted to U.S. EPA and Ohio EPA in May 1998 and approved in June 1998. Rocky Mountain Remediation Services L.L.C. (RMRS) was awarded the subcontract to remediate Silo 3. The overall objectives for the Silo 3 Project are the safe retrieval, stabilization/solidification, and the off site disposal of the present Silo 3 inventory. RMRS is responsible for the design, construction, operation, retrieval, treatment, and shutdown and dismantlement of the treatment facilities.

Contracts have been awarded for the study of methods to best treat the Silos 1 and 2 material. DOE has also prepared a Statement of Work for accelerating waste retrieval from Silos 1 and 2. DOE, employing the ROD amendment process, will decide upon the best method to stabilize or immobilize that material and develop milestones for implementing that method. In order to support the Record of Decision Amendment, Proof of Principle Testing was required. For the Proof of Principle Testing milestone for Silos 1 and 2, four vendors completed demonstrated testing. Final test reports detailing the results of these waste treatment tests are

expected by June 1999, and the results will support the OU 4 revised Feasibility Study due in draft to the regulators by February 1, 2000.

OU 5: Environmental Media

All media, soil, groundwater, and surface water remediation activities are within OU 5. An estimated 1.8 million cubic yards of soil will be excavated. Under projectization, excavation activities for other OUs and the OU 4 work are under the management of OU 5. Sitewide environmental monitoring is also under the management of OU 5.

The Record of Decision was signed in January 1996. DOE committed to clean up the contaminated soil and aquifer to the levels specified in the ROD considering the use of the property after remediation. The soils and water remediation projects are a major engineering and construction effort. The groundwater monitoring required by the ROD has been integrated with the RCRA monitoring requirements, resulting in significant savings. The Integrated Environmental Monitoring Plan was submitted in March 1997. To date, approximately 25 percent of the entire site has been certified as having attained final soil cleanup levels.

Under removal action authority, DOE assisted the local water works entity to provide municipal water to homeowners whose well water was affected by a contaminated plume. This effort has reduced the health risk to the public.

The Remedial Design Work Plan was submitted in June 1996, and the Remedial Action Work Plan for the Aquifer was submitted in April 1997. The Area 1, Phase 1 Remedial Action Work Plan was submitted in 1996, and the Final Remedial Action Work Plan for Area 1, Phase 1 was submitted in January 1997.

During FY 98, construction of the South Field Groundwater Extraction System Pipeline was initiated and excavation of the contaminated soil began. Also, the expansion of the Advanced Waste Water Treatment Facility was completed. This provides an additional design treatment capacity of 1,800 gallons per minute (g.p.m.), which increases the overall waste water treatment design capacity to 2,900 g.p.m.. To date, over two billion gallons of contaminated waste water have been treated.

Additionally, OU 5 negotiated a resolution of Ohio's Natural Resource Damage Claim. The settlement of the claim is being addressed through the Natural Resources Damage Assessment process and the subsequent development of a natural resources restoration plan.